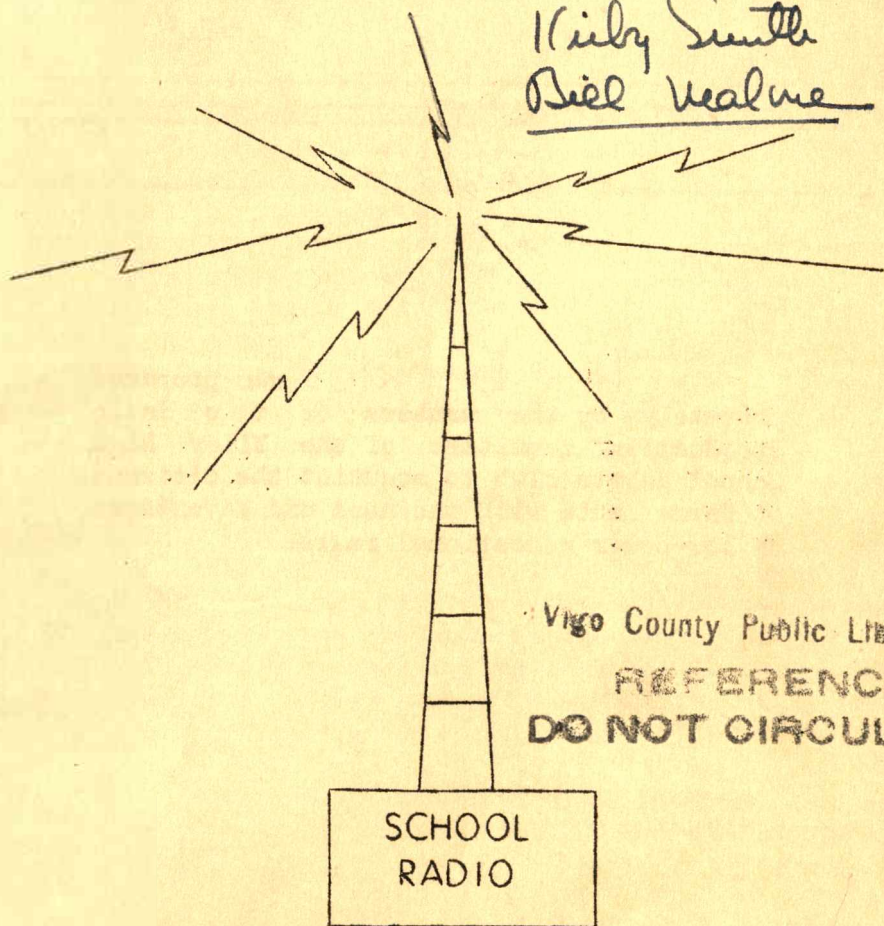
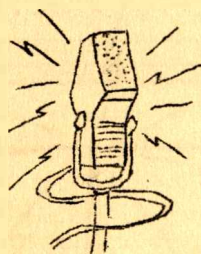


EDUCATION'S

Kelly Smith
Biel Healy

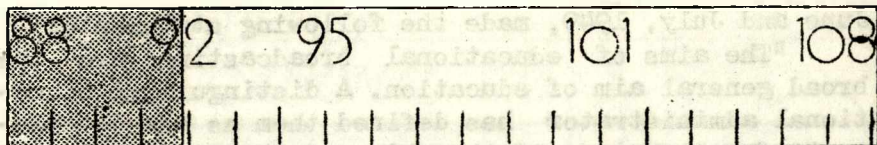


FOURTH DIMENSION



This booklet was prepared privately by the members of the Radio Broadcasting committee of the Wiley High School debate club to acquaint the citizens of Terre Haute with the need and advantages of low-power educational radio.

1 LIMITED EDITION



WHAT IS EDUCATIONAL RADIO?

When the Federal Communications Commission was making frequency allocations in 1946, it set aside twenty channels for the exclusive use of education. This was done upon strong urging from the Federal Office of Education and leading educators. These twenty channels reserved for education, channels 201-220, lie in the 88.1-91.9 mc. portion of the FM (frequency modulation) band.



Wayne Coy, then Chairman of the Commission, wrote:

"The earnest hope of the Federal Communications Commission is that American educators will not merely keep abreast of electronic progress, but that they will assume their rightful place among the leaders in the utilization of this modern technique for the reaching of the minds of men..."

"Eventually, the Commission expects FM to supplant AM in all but the sparsely-settled rural areas."

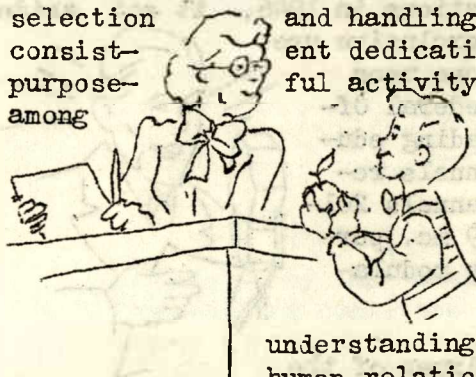
"Radio is a proven tool of teaching," states Franklin Dunham, Chief of the Educational Uses of Radio division of the U.S. Office of Education. "It has been measured by standards established in other fields of education which have exposed its strengths and weaknesses. For imparting facts and directing intellectual curiosity among new paths of inquiry, it is second only to reading."

Educational broadcasters who attended a Rockefeller foundation seminar at the University of Illinois

June and July, 1949, made the following statements:

"The aims of educational broadcasting are the broad general aim of education. A distinguished educational administrator has defined them as the development of a structure of thought, and the improvement of human relations and adjustment....

"Educational broadcasting has been most clearly distinguished by its high concern for integrity in the selection and handling of materials, and by its consistent dedication to social purpose. This purposeful activity may take several forms, among them:



- (1) informing.
- (2) stimulating the individual to organize and give meaning to information.
- (3) contributing to the understandings that make for better human relations and adjustment.

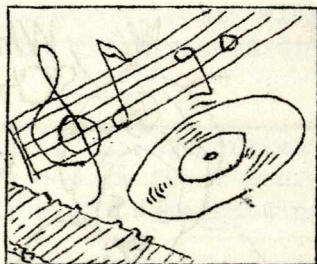
- (4) broadening participation in the culture of our society.
- (5) acting as an outlet for the varied expressions of the community...and acting as a force within the community to help it solve its problems.
- (6) (technical experimentation.)"

In short, educational FM is a means within the reach of the ordinary educator in giving actual information and stimulation to the public and students and of giving actual production and technical experience on a large scale to students, etc.

The F.C.C. has relaxed a great percentage of its strict requirements for educational broadcasting. Educational FM does not require full-time first class operators, expensive monitoring equipment, or expensive technical surveys.

Frequency modulation will at all times deliver clear, noise-free reception in the 50 to 15,000 cps. range.

THE NEED FOR EDUCATIONAL FM



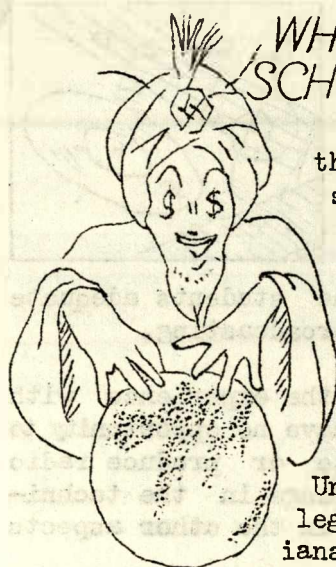
Wiley high school radio students are not being challenged sufficiently. Through the courtesy of WBOW they are allotted one-half hour every third week. That is hardly sufficient to give the students adequate practice and experience in radio broadcasting.

Students just aren't getting the experience with actual radio broadcasting. They have no opportunity to write news, no opportunity to write or produce radio documentaries and dramas; no challenge in the technical fields, and little experience in the **other** aspects of this great field.

Though the local stations cooperate in the matter of activity promotion, "spot" announcements, etc., are subject to commercial pressures, etc. School system news is not now available in adequate quantity to the public. The treasured school-home link is now sometimes strained to the breaking point. Public interest in school and civic work could be spurred to greater heights than it now is.

Students and the public do not now have available some of the higher type music and drama, which is not commercially available. Grade and junior high school students are being denied the network-quality educational programs such as "The Ways of Mankind," "We Human Beings," "Cooper Union Forum," "Music for the Connoisseur" (13 one-hour programs featuring the world's great music), "BBC World Theatre," "The Human Adventure," and others from the National Association of Educational Broadcasters tape network; the weekly Westinghouse "Adventures in Science," and current events re-broadcasts at convenient times. There is a need for news reporting and analysis at the the students' level.





WHAT ARE OTHER SCHOOLS DOING IN RADIO?

In the state of Indiana, alone, there are twelve educational FM stations in operation or under construction. One is operated by a junior high school in Muncie. High schools in Huntington, New Castle, New Albany, Gary, and Wabash, Indiana, have made use of 10-watt FM stations. Other stations in Indiana include: DePauw University, Evansville College, Indiana University, Ball State Teachers College, the Jordan school of music (Indianapolis), and Purdue University.

Huntington city schools have made outstanding progress in this field under the full-time audio-visual director, M. McCabe Day. Station WVSH broadcasts seven days a week, six hours a school day. Through the efforts of local merchants—though no advertising announcements are permitted under an educational license—WVSH broadcast every football and basketball game—at home and away.

The state of Wisconsin has established, recently, a 10-station broadcasting network. This network broadcasts ten hours a day over two AM stations and fifteen hours over its eight-station FM network. Wisconsin programming is directed not only to students, but to farmers and city folk. A similar set-up is planned for Louisiana.

HOW DOES THIS APPLY TO WILEY?

Miss Winnifred M. Ray, head of the Wiley department of speech, believes that such an educational FM station would benefit her speech and radio students greatly. She believes that it would provide a challenge—and of course experience—to them to do their best. She is firmly convinced it would solve the needs set forth in a preceding chapter.

Advanced students make such a station technically feasible under the supervision of the Wiley vis-ed director, Harry M. Johnson.

Speech facilities, as envisioned in the current budget, would prove quite adequate—with minor modifications—for the installation of radio broadcasting equipment and procedures.

The Wiley debate club is actively supporting radio for Wiley. The Radio Broadcasting committee has investigated the subject thoroughly and pronounced Wiley radio desirable and feasible.

PROPOSED PROGRAMMING

The committee proposes six-day-a-week programming embodying the following:

1. Student-gathered and -written news broadcasts, with student-level analysis of the national news.

2. N. A. E. B. (Nat'l. Ass'n. of Educational Broadcasters) tape network programs, such as: "We Human Beings," "Cooper Union Forum," "Music for the Connoisseur," "BBC World Theatre," "The New World of Atomic Energy," "The Ways of Mankind," and the many others being currently released.

3. Documentary and drama programs produced locally by high school students from Wiley and any other city school which wishes to participate in this area.

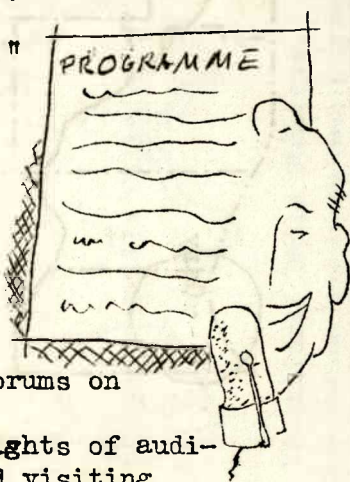
4. Local discussions and forums on current events, etc.

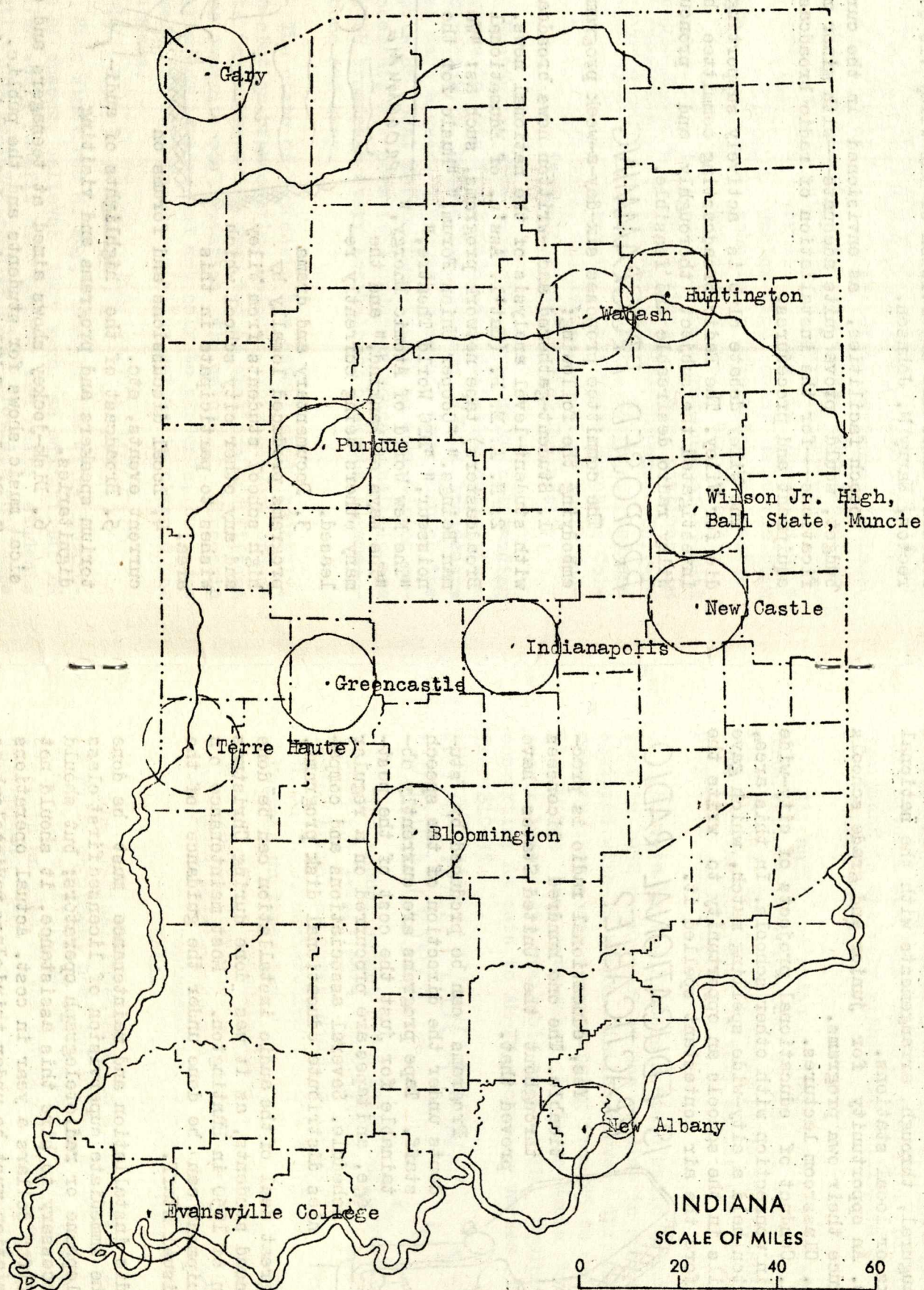
5. Broadcast of the highlights of auditorium speakers and programs and visiting dignitaries.

6. Disk-jockey shows aimed at teenagers and classical music shows for students and the public.

7. Display of Wiley music and forensic talent.

8. Promotion of money-making and other activities





Indiana's Educational Radio Stations.

of all the city schools.

9. Delayed broadcasts of current events, such as the inaugural, through arrangements with the national networks or local stations.

10. An opportunity for junior and grade schools to produce their own programs.

11. Classroom lectures.

12. Conduct of educational projects of city-wide scope, in connection with other schools. In this area, Huntington held a city-wide spelling match, which gave the pupils in the schools an opportunity to write the word before the air contestant spelled it.



IS EDUCATIONAL RADIO PRACTICABLE?

Yes, educational radio is practicable. The one hundred licensees throughout the United States have proved that.

Programs can be produced by students under the direction of the speech staff. Tape programs are currently obtainable for just the cost of the postage, and tapes are procured on a regular schedule. Several associations and companies distribute educational disk programs.

A great deal of the audio installation can be done by advanced students, as it was done during Christmas vacation of 1950 in Huntington. Most maintenance on this equipment can be done under the guidance of the audio-visual staff.

Radio installation and maintenance must be done under the immediate supervision of licensed first class radiotelephone or radiotelegraph operators; but should it be necessary to hire this assistance, it should not exceed fifty dollars a year in cost. Actual operations of the station must be under third class radiotelephone operators, a status which may be obtained by students

and/or faculty by passing a simple, non-technical, test after a few days' study. Operation of the audio equipment is entirely within the ability of the average high school student.

All audio and radio equipment is certified by the Underwriters Laboratories, so that it would present no fire hazard. The current consumption is insignificant. Room for the equipment is very small; the transmitter proper is only 2'x2'x3'.

Surveys by the Wisconsin State radio council show that in 1952 nearly 42% of the radios in Madison were equipped with FM bands. Similar surveys throughout the country show percentages ranging from 25 to well-above 50. FM has been entrenched in Terre Haute by the sports broadcasts available only on FM. Equipment for converting AM sets to AM-FM operation varies in cost from \$10-35.

WHAT WILL EDUCATIONAL RADIO COST?

The annual budget for a Wiley radio station should not exceed \$250. Specifically, the following annual expenses would be incurred:

N. A. E. B. membership.	\$ 15.00
Postage on tapes and transcriptions.	100.00
Engineering services.	50.00
Equipment maintenance and replacements.	50.00
Total.	\$ 215.00

The original investment in educational FM radio equipment need not exceed \$3,000 in an installation of the 10-watt level. The following presents an idea of the equipment investment cost:

TRANSMITTER, ETC. \$ 1268

1 10-watt FM transmitter (easily converted to greater power), transmission cable, and FM antenna.

STUDIO EQUIPMENT. \$ 507
 2 speakers and baffles, 4 low-hi Z
 microphones, 5 mike stands, studio clocks,
 studio warning lights, blank tape, and
 limited sound treatment.

AUDIO INPUT EQUIPMENT. \$1900
 2 tape recorders (portable), two
 turntables, two 16" transcription arms
 and cartridges, 1 remote unit, 2 ampli-
 fiers, remote cable, VU meters, attenu-
 ators, jack panels, panel, etc.

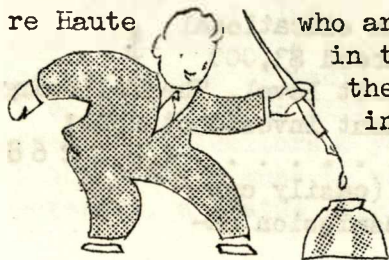
ESTIMATED TOTAL. ~~\$2675~~ ^{\$4000}
 (Excludes installation cost, which should
 not exceed \$100.)

WHO CAN PAY FOR EDUCATIONAL RADIO AT WILEY?

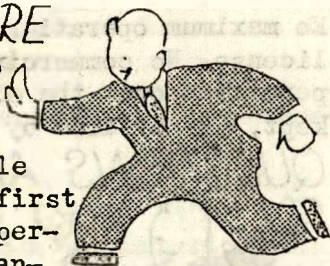
School city officials have indicated that funds are not currently available for the investment in radio equipment—other than the remodeling of the speech room into a little theatre (Wiley has no stage at all). Many grade schools here have better facilities for producing plays than Wiley.

Thus, the \$2700 or so must be raised in the community by the students themselves. By presenting the play "Annie Get Your Gun" at the Wabash Theatre, February 11th, the speech groups made \$200. In the 1952 fall magazine campaign, the speech clubs made \$100.

But this will not be enough. The Wiley debate club therefore makes an appeal to the citizens of Terre Haute who are interested in and believe in the speech program to assist the students of Wiley high school in this undertaking.



WHAT IS THE PROCEDURE FOR OBTAINING RADIO?



The procedure for obtaining an educational FM station is simple and practically expenseless. The first step is to obtain a construction permit (which gives the tentative channel assignment, etc.) from the F.C.C. This must be done by the school city. The filing of a construction permit does in no way obligate the school city, legally or financially. The construction permit is issued for eight months, but may be terminated sooner or extended. Lapsing of the permit does not necessarily prejudice the Commission against any future application.

Then equipment must be purchased and installed. Installation of the radio equipment proper must be made under the supervision of a licensed operator. After equipment is installed, the FCC engineer in Chicago and the Washington office are notified of the fact, and equipment tests are made. This period covers not over thirty days.

Program tests are made next. The notification procedure is quite similar and tests continue for 30 days or until the license is issued.

After program tests, formal application for a station license is made. This application must specify the tentative average program schedule, but is not binding in this area. The license is granted for a period varying between 12 and 23 months; renewals are for three years. The whole FCC procedure involves no fees of any kind.

When the station license is granted, regular programming may begin.

Educational FM stations are not obligated to broadcast a minimum number of hours daily. They may suspend operation for period such as summer vacation.

No maximum operation times are specified in the usual license. No commercial announcements of any nature are permitted over the air. Though a program log must be kept, it may be done by the student operator.

QUESTIONS AND ANSWERS ABOUT EDUCATIONAL FM?



Q. WHAT WILL THE RANGE OF SUCH A 10-WATT FM STATION BE?

A. The range varies from station to station. One station in Dallas has an effective range of twenty miles. A station located at Wiley would probably have a range of eight miles east and west and twelve miles north and south.

Q. WHAT ABOUT TELEVISION?

A. First of all, the F.C.C. has allocated only one educational channel to Terre Haute. It will probably go to I.S.T.C. Television is very expensive to install and operate. Initial costs of some commercial stations run as high as one million dollars.

Q. WHAT ABOUT THE REBROADCASTING OF EDUCATIONAL PROGRAMS?

A. Under the present federal regulations, educational stations may rebroadcast any government program. Rebroadcasting privileges must be granted by the commercial station or network. In any case, all commercial announcements must be deleted.

Q. WHAT ABOUT WAR SURPLUS EQUIPMENT?

A. The present federal law provides that surplus equipment which is used for educational purposes may be obtained for the freight charges. However, a representative of the General Services administration has expressed the opinion that any equipment such as Wiley would need is being held by the Army or Navy for future use. Investigations into this area continue.

Q. IS WILEY'S RADIO STATION PORTABLE ENOUGH TO BE MOVED IN CASE OF THE ERECTION OF A NEW BUILDING?

A. The transmitter, studio equipment, and most of the audio input equipment could be moved intact should it be necessary.

Q. WHERE CAN MORE INFORMATION ABOUT EDUCATIONAL RADIO BE OBTAINED?

A. Informative booklets are available from the U.S. Office of Education, Federal Security Agency, Washington 25, D.C.

Rules and Regulations of the Federal Communications Commission, Parts 2, 3, and 13, plus other information sheets, are available from the Superintendent of Documents, Washington 25, D.C. at 10¢ per section.

Additional information may be obtained from the executive director of the National Association of Educational Broadcasters, University of Illinois, 119 Gregory Hall, Urbana, Illinois.

Q. WHAT ABOUT INCREASED POWER?

A. By merely purchasing an additional power supply, the power of the transmitter could be increased to forty watts. However, any increase of power from 10 watts would require the hiring of a full-time first or second class radiotelephone or -telegraph operator.

Q. ARE TEACHERS TAKING ADVANTAGE OF IN-SCHOOL EDUCATIONAL PROGRAMS?

A. A recent survey in Huntington showed that 30 teachers out of one hundred (in ALL grades) teachers were using 63 classroom listening periods per week for the four Purdue University programs for grades 1-7. Public response to higher-level programs is good.

Q. ARE CONTRIBUTIONS OF MONEY AND/OR EQUIPMENT DEDUCTABLE FROM YOUR INCOME TAX?

A. All contributions of money and/or radio equipment are deductible on your income tax report.

Radio Broadcasting Committee
Wiley Debate Club
Wiley High School
Terre Haute, Indiana.

Supplementary Information concerning the proposal for a 10-watt fm station at Wiley high school.

SECTION ONE: Tentative Equipment-cost Estimates (as examined by our engineer)

Item 1: Transmitting Equipment:

1 -- Gates BF E-10 transmitter, complete.	\$ 1195.00
1 - Gates FM-11 folded dipole antenna.	35.00
1 - 150-foot length, Gates transmission line @ 25¢/ft.	38.00
1 - antenna tower, including labor.	not to exceed 75.00
Freight on above.	approximately 15.00

\$ 1358.00

Item 2: Studio Equipment:

4 - Shure unidyne unidirectional dynamic microphones.	\$ 167.00
1 - Electro-Voice V-3 bidirectional velocity microphone.	41.00
1 - Astatic dynabar unidirectional dynamic microphone.	40.00
4 - studio warning lights; 2 @ 15.00; 2 at \$3.00.	36.00
2 - baffles @ 5.50.	11.00
2 - co-axial speakers (40-15,000 cps) @ 13.00.	26.00
14- Cannon Type U-A3-13 panel-mount female connectors.	28.00
16- Cannon Type U-A3-12 cable plugs (male).	35.00
2 - headphones with bands @ .98.	2.00
2 - Gates (Seth Thomas) 15" studio clocks.	30.00
4 - floor-type microphone stands, standard thread.	24.00
1 - boom-stand microphone stand.	36.00
2 - baby-boom microphone stands (including brackets).	13.00
20,000 feet (8 hours at 7½") new Scotch plastic-base tape.	75.00

\$ 564.00

Item 3: Audio Input Equipment:

1 - Concertone 14015 basic tape recorder.	345.00
1 - Pentron portable tape recorder 9T-30.	142.00
1 - Pentron X-302 reel extension (for 10" reels).	23.00
2 - 16" Rek-o-Cut CVS-123 3-speed turntables.	170.00
2 - 16" transcription arms w/cartridge.	30.00
2 - Compensators @ 2.00.	4.00
100 feet, microphone cable (rubber covered).	6.43
500 feet, telephone type remote cable.	16.00
100 feet, audio cable (broadcast quality).	2.41
1 - illuminated VU meter (Triplett, Model 426).	18.00
11- DPDT telephone lever switches.	26.00
3 - 4PDT telephone lever switches.	8.00
6 - specially-constructed pre-amplifiers, not to exceed \$25 per.	150.00
1 - power supply for above.	50.00
1 - monitor amplifier (50 watt).	50.00
1 - specially-assembled remote unit.	110.00
1 - line (program) amplifier.	105.00

\$ 1355.00

Item 5: Studio Modifications:

- 2 - rooms, limited sound-absorption treatment
- 1 - control room bench, etc.

Item 6: License Procurement:

- 1 -- engineering advice (Section IV, form 340)
- 3 - maps, diagrams, etc. for exhibits
- 8 - aerial photographs for exhibit
- 1 - notary's fee.

Item 4: Annual Budget:

National Assn. of Educational Broadcasters membership.	\$ 15.00
Postage on tapes and transcriptions, and related charges.	150.00
Engineering services.	65.00
Equipment maintenance and replacements.	50.00
Programming budget.	<u>50.00</u>
	\$ 330.00

Total for Items 1, 2, and 3: \$ 3277.00

Item 4: 330.00

Total for Items 1, 2, 3, and 4: \$ 3607.00

SECTION TWO: Tentative proposal for Programming:

(Note: This schedule does not include the special events programs which may be produced locally. A list of special events programs to be considered follows this schedule. Because of production difficulties, some live shows might be bi-weekly for a limited time.)

Monday:

15 min. - Guest Disk Jockey
15 min. - #Terre Haute Industries
on Parado
15 min. - Science department program
15 min. - History Highlights
15 min. - Wiley radio class
15 min. - Indiana History*

Tuesday:

15 min. - This Week in Sports
15 min. - School Days (pre-school)
15 min. - Musically Yours (Music dept.)
15 min. - #Civic News, Views, and Interviews
15 min. - (Other schools)

Wednesday:

15 min. - Guest Disk Jockey
15 min. - Garfield High School show
15 min. - Literary Gleanings
15 min. - Wiley Drama club
30 min. - High School Forum
60 min. - Music for Connoisseurs**
30 min. - A Study in Semi-Classics

- Locally taped.

Thursday:

15 min. - Sportscope
15 min. - Pre-school Program
15 min. - Poetry Hour
15 min. - History Highlights
30 min. - #Classroom views
30 min. - People Under Communism**

Friday:

15 min. - Guest disk Jockey
15 min. - (Other schools)
30 min. - Adventures in Radio (Wiley)
15 min. - Your Schools (school system
news and activity promotion)
30 min. - Adventures in Science*
15 min. - Cinema Review

* Signifies tape or transcription

** Signifies N.A.E.B. tape, subject to
change during each quarter.

Special Events Programming:

Wiley 'B' team games
Citizens' Committee for Better Schools
Assembly Lectures, etc.
Rebroadcasts from C.B.C. and B.B.C., also
WILL and WFIU.